

## *A Top-Down derivation of non-identical wh-copying in German*

**1. The problem.** *Wh*-copying (WC) represents the phenomenon whereby multiple links of an A'-chain are spelled-out, as in (1). As such, WC is considered one of the clearest types of evidence for successive cyclicity and the Copy Theory of Movement (Chomsky 1993).

- (1) *wen glaubst du wen Maria liebt?*  
who believe you who Maria loves

However, recent studies have brought to light two types of WC that appear difficult to reconcile with standard approaches without additional stipulations. First, intermediate copies may be spelled out as d-pronouns without generating semantic or pragmatic effects (cf. 5 below). Second, complex WC (involving D-linked (DL) *wh*-phrases in the matrix clause; (2)) is in fact allowed, contrary to standard accounts which exclude it on theoretical grounds (Felser 2004: 566, Schippers 2012: 182-183 and references therein suggest that DL phrases do not undergo cyclic movement, hence their unavailability in WC; cf. Nunes 2004). Complex WC turns out to be a viable solution employed by a number of WC languages, such as Dutch (Koster 2009), Afrikaans (Lohndal 2010) and Seereer (Baier 2018).

- (2) *welchen Mann glaubst du wen Maria liebt?* (Pankau 2013)  
which man believe you who Maria loves

One of the several issues engendered by these types of WC (and by the cross-linguistic variation they are subject to) is the development of formal analyses that might account for the morphophonological asymmetry obtaining between the matrix and the embedded copy(s). In fact, it is not at all clear how this may be achieved by standard bottom-up analyses (see Pankau 2013: 101-111 for an overview of the problems), which moreover face some theoretical difficulties in deriving successive cyclicity, such as violations on the ban on “look-ahead” or their inadequacy with capturing freezing effects (Chesi 2012).

**2. An alternative framework.** Under a top-down derivational perspective (Chesi 2015), successive cyclicity is implemented by first merging the *wh*-item into the criterial position (the criterial *wh*-feature triggers this operation), then “moving” the remaining features of the *wh*-item down into the structure, selected (CP) phase after selected (CP) phase, until a predicate selects them. As a consequence: i. movement is not driven by *ad hoc* features on probes, but from the unselected remaining features; ii. the *wh*-item does not sink into islands (by definition, unselected, nested phases; Bianchi & Chesi 2006) and — most importantly for our purposes — iii. distinct re-merge positions do not behave as exact copies.

**3. The proposed derivation.** Coherently with this top-down framework, I assume, first, that *wh*-probes are lexicalized through the insertion of compatible feature-bundles (FB; cf. 3a) that must satisfy the criterial feature. Building on Cheng (2000) and Pankau (2013), I moreover assume that such FB are a combination of a morphological “core”, corresponding to a free relative proform, with an inherently silent *wh*-feature. Second, the inserted element’s remaining features (i.e. the core, unselected by the probe, cf. 3b) are stored into a repository (*memory buffer*) where they are put on hold until a suitable selecting position is encountered in the course of the derivation.

- (3) a. [wh, D, φ, (N)] *FB of a wh-pronoun at criterial position*  
b. [D, φ, (N)] *stored FB after lexicalization of the wh-probe*

In the case of long-distance dependencies, I suggest that stored elements are re-merged onto the edge of the subsequent phase with the effect of “refreshing” the item in memory (cf. Felser 2001), a strategy aimed at increasing the probe’s chances of establishing a successful dependency with its goal by mitigating the effects of memory decay (cf. Lewis & Vasishth 2005). Third, FB are associated with phonological content at each phase (a sort of cyclic “late” lexicalization reminiscent of Distributed Morphology). In particular, the morphosyntactic features of the cores (e.g. 3b) may be phonologically interpreted as either

*wh-* or *d-*pronouns, depending on the particular morphemes a variety uses to introduce free relatives (recall that cores are assumed to correspond to free relative proforms). This mechanism (cf. 4), allows us to capture the free alternation observed at intermediate positions between the use of *wh-* and *d-*pronouns allowed by some varieties (cf. 5):

- (4) [wh, D,  $\phi$ , (N) *wen*] ... glaubst du ... *lexicalization of wh-probe*  
 [~~wh~~, D,  $\phi$ , (N) *wen*] ... glaubst ... [D,  $\phi$ , (N) *wen/den*] *lexicalization of next edge*
- (5) Wen glaubst du wen Peter denkt den sie geküsst hat?  
Wen glaubst du den Peter denkt wen sie geküsst hat?  
 Who believe you who Peter thinks who she kissed has

Finally, the intra- and cross-linguistic variation with DL copying (e.g. 2) may be captured by assuming the following two parameters: (i) a morphophonological parameter regulating the spell-out of intermediate copies and licensing the elision of the lexical restriction whenever the latter's  $\phi$ -features are overtly expressed on D; this would account for the fact that while German and Dutch cannot realize N on intermediate copies, Afrikaans can do so (cf. 7): only in the former two languages is D  $\phi$ -inflected. (Of course, this is merely a descriptive generalization). And (ii) a morphosyntactic parameter concerning the cross-linguistic distribution of DL phrases in the left periphery and built on Rizzi (2011) and Villata et al.'s (2016) proposal to the effect that DL phrases may have (at least) two different landing sites. In particular, languages may either lexicalize a specific functional projection reserved for DL, which I assume is the case for German, or one normally reserved for bare *wh*-operators, Q or *wh*, the case of Dutch and Afrikaans. The assumption that in German the DL morpheme (*-Ich-*) is associated with a criterial feature makes the prediction that such morphemes cannot be expressed at intermediate positions in WC, as they will be removed in the left periphery with the lexicalization of the DL position. This accounts for (2) whilst correctly ruling out cases such as (6) (fine in dialectal Dutch, as predicted by the above parameters).

- (6) \*Welchen Mann glaubst du welchen Maria liebt?  
 Which man believe you which Maria loves
- (7) Watter meisie sê hy watter meisie kom vanaand kuier? (Afrikaans, Lohndal 2010)  
 Which girl says he which girl comes tonight visit

A simplified derivation of WC with DL phrases may be schematized in the following way:

- (8) *Step 1 & 2: Lexicalization and removal of the criterial features in the left periphery*  
 [[wh( $\emptyset$ ), D (*w-*), ~~D-linked~~ (*-leh-*),  $\phi$  (*-en*)] [N (*Mann*)]]  
*Step 3 & 4: re-merge of FB at next edge and elision of lexical restriction licensed by  $\phi$*   
 [[D (*w-*) +  $\phi$  (*-en*)] [~~N~~ (*Mann*)]]

Besides being empirically more adequate, the new analysis attempts to achieve two results in particular: (i) "to bring syntactic derivations into closer harmony with processing concerns" (Chesi 2015: 71), and (ii) to derive the morphological shape of copies as a direct consequence of the syntactic computation.

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